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Hydrocarbon Metabolizing Enzymes and Lung Cancer.

The carcinogen metabolizing enzyme, aryl hydrocarbon hydroxylase (AHH), can be measured in human subjects using short-term lymphocyte culture. AHH shows genetic variation in a normal human population. Most lung cancer patients have relatively high activities. The objectives of this study are two:

1. To evaluate carefully and seek to improve the assay method;
2. To plan a prospective study of a normal human population in order to evaluate cause/effect relationships between elevated AHH and lung cancer.

To improve the assay method, new and modified techniques of culturing lymphocytes and other blood cells are planned, also improvement in the sensitivity of the enzyme assay. To evaluate the method, double-blind studies are in progress.

The prospective study is in the planning stages, in collaboration with cancer epidemiologists, to determine the optimum population for screening and follow-up.

The double-blind studies are well underway and are showing fairly good reproducibility of the method in most subjects. The assay has been improved in several respects, and is in process of being standardized by research laboratories throughout the country.

The plans for a prospective study are close to being finalized.

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